

1. (Amended) An exposure apparatus that transfers a pattern of a mask onto a substrate by irradiating said mask with exposure light, the exposure apparatus comprising:
a plurality of sealed rooms in each of which said mask is temporarily stored, including a mask room that covers at least an optical path near said mask of the optical path of said exposure light from said mask to said substrate; and

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wherein said sealed rooms are filled with the same kind of specific gas, or different kinds of specific gases, having a characteristic of absorbing little of said exposure light, and wherein the concentration of impurities in said specific gas in at least one of said sealed rooms is different from the concentration of impurities in said specific gas in said mask room.

10. (Amended) An exposure apparatus according to claim 2, further comprising an energy-beam-emitting portion provided in a path for carrying said mask to irradiate said mask with an energy beam in an ultraviolet range.

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12. (Amended) An exposure apparatus according to claim 2, further comprising a mask-transport system arranged in said mask-reserve room to transport said mask from and to said mask room.

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13. (Amended) An exposure apparatus according to claim 1, further comprising:
a projection optical system that projects said exposure light emitted from said mask onto said substrate, and

wherein said mask room covers the optical path between said mask and said projection optical system.

19. (Amended) An exposure apparatus according to claim 1, further comprising:
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a substrate room constituted by a sealed room that covers at least an optical path near a substrate of the optical path of said exposure light from said mask to said substrate and that is filled with said specific gas.

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21. (Amended) An exposure apparatus according to claim 19, further comprising:

a projection optical system that projects said exposure light emitted from said mask onto said substrate, and

wherein said substrate room covers the optical path between said substrate and said projection optical system.

22. (Amended) An exposure apparatus that transfers a pattern of a mask onto a substrate by irradiating said mask with exposure light, the exposure apparatus comprising:

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a plurality of sealed rooms in each of which said substrate is temporarily stored, including a substrate room that covers at least an optical path near said substrate of the optical path of said exposure light from said mask to said substrate; and

wherein said sealed rooms are filled with the same kind of specific gas, or different kinds of specific gases, having a characteristic of absorbing little of said exposure light, and wherein the concentration of impurities in said specific gas in at least one of said sealed rooms is different from the concentration of impurities in said specific gas in said substrate room.

27. (Amended) An exposure apparatus according to claim 23, further comprising a substrate-transport system arranged in said substrate-reserve room to transport said substrate from and to said substrate room.

30. (Amended) An exposure apparatus that transfers a pattern of a mask onto a substrate by irradiating said mask with exposure light, the exposure apparatus comprising:

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a sealed room that stores said mask so as to expose said substrate to said exposure light and that is filled with specific gas having a characteristic of absorbing little of said exposure light; and

a gas-charging mechanism that charges a sealed-type mask case containing said mask with said specific gas again after the completion of exposure using said mask in said sealed room.

31. (Amended) An exposure apparatus according to claim 4, wherein said gas-replacement mechanism performs said gas replacement by making said specific gas flow continuously.

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32. (Amended) An exposure apparatus according to claim 5, wherein said gas-replacement mechanism spends time not less than 10 seconds in performing said gas replacement.

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33. (Amended) An exposure apparatus according to claim 1, wherein part of at least one of said sealed rooms, which part contacts said specific gas, is coated with material emitting little gas.

34. (Amended) An exposure apparatus according to claim 1, wherein said specific gas is supplied and used in a circulated manner in at least one of said sealed rooms.

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36. (Amended) An exposure apparatus according to claim 1, wherein said exposure light is light having a wavelength not longer than 200nm.

38. (Amended) An exposure method that transfers a pattern of a mask onto a substrate by irradiating said mask with exposure light, the exposure method comprising:

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filling a sealed space that covers at least an optical path near said mask of the optical path of said exposure light from said mask to said substrate with low-absorbent gas that has an impurity concentration lower than a first concentration and that has a characteristic of absorbing little of said exposure light;

temporarily storing said mask in a reserve room adjacent to said sealed space before carrying said mask into said sealed space and replacing gas in said reserve room with said low-absorbent gas that has an impurity concentration not lower than a first concentration and lower than a second concentration; and

transporting said mask to a predetermined position in said sealed space and transferring said pattern onto said substrate.

39. (Amended) An exposure method that transfers a pattern of a mask onto a substrate by irradiating said mask with exposure light, the exposure method comprising:

filling a sealed space that covers at least an optical path near said substrate of the optical path of said exposure light from said mask to said substrate with low-absorbent gas that has an impurity concentration lower than a first concentration and that has a characteristic of absorbing little of said exposure light;

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temporarily storing said substrate in a reserve room adjacent to said sealed space before carrying said substrate into said sealed space and replacing gas in said reserve room with said low-absorbent gas that has an impurity concentration not lower than a first concentration and lower than a second concentration; and

transporting said substrate to a predetermined position in said sealed space and transferring said pattern onto said substrate.

40. (Amended) An exposure method according to claim 38, wherein in said gas replacement, said low-absorbent gas is supplied to said reserve room after discharging gas in said reserve room to decrease the internal pressure.

41. (Amended) An exposure method according to claim 38, wherein said exposure-light is light having a wavelength not longer than 200nm.

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43. (Amended) A device manufacturing method including a lithography process, wherein in said lithography process, exposure is performed using an exposure apparatus according to claim 1.

44. (Amended) A device manufacturing method including a lithography process, wherein in said lithography process, exposure is performed using an exposure method according to claim 38.

45. (Amended) An exposure apparatus that transfers a pattern of a mask onto a substrate by irradiating said mask with exposure light, said mask having a thin film attached thereto via a frame, the exposure apparatus comprising:

a gas-replacement room in which a space enclosed by said thin film, said frame and said mask is filled with specific gas having a characteristic of absorbing little of said exposure light.

46. (Amended) An exposure apparatus according to claim 45, further comprising:
a mask room that covers at least an optical path near said mask of the optical path of
said exposure light from said mask to said substrate; and
wherein said gas-replacement room is arranged adjacent to said mask room.

50. (Amended) An exposure apparatus that transfers a pattern of a mask onto a substrate by irradiating said mask with exposure light, the exposure apparatus comprising:

 a plurality of sealed rooms in each of which said mask is temporarily stored, including a mask room that covers at least an optical path near said mask of the optical path of said exposure light from said mask to said substrate;

 a transport mechanism that transports said mask between said plurality of sealed rooms; and

 an energy-beam-emitting portion that is provided in a path for transporting said mask and irradiates said mask with an energy beam in an ultraviolet range.

53. (Amended) An exposure method that transfers a pattern of a mask onto a substrate by irradiating said mask with exposure light, said mask having a thin film attached thereto via a frame, the exposure method comprising:

filling a sealed space that covers at least an optical path near said mask of the optical path of said exposure light from said mask to said substrate with low-absorbent gas that has a characteristic of absorbing little of said exposure light;